

REMARKS

Applicant requests reconsideration of the application in view of the discussion that follows. The status of the claims as of this response is as follows: Claims 1-15 are pending. No claims have been amended herein.

Rejection under 35 U.S.C. §103

Claims 1-5, 7, 8, 10, 11, 13 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Park, *et al.* (Science, 2002) (Park) in light of Fluke Corporation (Fluke Model 187 & 189 True RMS Multimeter Users Manual, 2000) (Fluke), and in view of Eggers, *et al.* (U.S. Patent No. 5,891,630) (Eggers). The Office Action contends that Park combined with Fluke discloses all of the elements of claim 1 except that the combination fails to teach that the substrate comprises integrated addressing circuitry in operable relation to each of the plurality of features and also fails to teach the step of providing a signal to the addressing circuitry to select one of the plurality of features to be interrogated. However, asserts the Office Action, Eggers does teach the features missing from the combined teaching of Park and Fluke.

Applicant respectfully traverses this ground of the rejection. Without acquiescing in the assertions in the Office Action, Applicant submits that the combined teaching of Park, Fluke and Eggers does not disclose or suggest each and every element of claim 1. The method of claim 1 includes the limitation that the microarray employed comprises a pad of resistive material disposed on the substrate between the first electrode and the second electrode. Even if for the sake of argument one were to accept the contentions in the Office Action regarding the disclosure of Park and Fluke, the combined teachings of these two references do not disclose or suggest a pad of resistive material on the substrate between the first and second electrodes.

The Office Action contends that Park discloses an array of four electrode pairs with a different oligonucleotide capture strand in the electrode gap wherein the oligonucleotide strands are immobilized onto a layer of SMPB-modified silicon dioxide coated onto a silicon wafer. In addition, asserts the Office Action, Park teaches the step of increasing the sensitivity of the device by exposing the active component of the device to a solution of Ag(I) and hydroquinone (i.e., contends the Office Action, applying a source of metal ions). The Office Action alleges that Park teaches capacitance or conductivity measurements to determine the number of

target molecules that fill the gap and further teaches measuring the resistance value across the gaps with a Fluke 189 multimeter.

As indicated above, the combined teachings of Park and Fluke fail to disclose a pad of resistive material on a substrate between a first electrode and a second electrode as recited in the present claim. First, Applicant's specification identifies silicon dioxide as a non-conductive material that may be employed for the substrate such as in the form of a thin film (page 18, lines 13-16). Second, silicon dioxide in its various forms such as, for example, silica, quartz, sand and the like, is well-known as a non-conductor to those skilled in the art. See, for example, <http://www.eecis.udel.edu/~thompson/ELEG450/report.htm>. Therefore, the silicon dioxide coating of Park is not a pad of resistive material as recited in claim 1. The silicon dioxide coated silicon wafers of Park represent only a substrate and lack the required pad of resistive material as presently claimed.

The Office Action asserts that it has been determined that Applicant's term "resistive" as supported in the specification applies to any material that is able to resist the flow of electricity, including silicon dioxide. Furthermore, the Office Action contends that Applicant's previous response did not address this "determination" in the previous office action and further contends that it is respectfully presumed that Applicant does not rebut the prior arguments.

Applicant submits that the determination referred to above is not supported by either the disclosure in Applicant's specification or the knowledge and understanding of one of ordinary skill in the art. As mentioned above, Applicant's specification (page 18, lines 13-16) particularly identifies silicon dioxide as a non-conductor that may be employed as a substrate in Applicant's invention. In this manner, Applicant specifically distinguishes silicon dioxide from resistive materials. Furthermore, as indicated above, the fact that silicon dioxide is a non-conductor is well-known in the art. For the reasons presented above, the combined teachings of Park and Fluke do not teach or suggest a pad of resistive material on the substrate between the first and second electrodes. Furthermore, Eggers does not cure the above deficiencies of the combined teachings of Park and Fluke because Eggers is silent as to a pad of resistive material on a substrate.

Claims 2-5 and 7 are patentable over the combined teachings of Park, Fluke and Eggers at least as a result of their respective dependency from claim 1, which, as demonstrated above, is patentable over the combined teachings of the references.

Claim 8 is patentable over the combined teachings of Park, Fluke and Eggers for reasons similar to those discussed above with regard to the rejection of claim 1 over the combined teachings of the above references.

Claims 10, 11, 13 and 14 are patentable over the combined teachings of Park, Fluke and Eggers at least because of their respective dependency from claim 8, which, as demonstrated above, is patentable over the combined teachings of the references.

Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Park in light of Fluke and in view of Eggers as applied to claims 1 and 3 above, and further in view of Cheung (U.S. Patent No. 5,132,242).

Without acquiescing in the above rejection, claim 6 is patentable over the combined teachings of Park, Fluke, Eggers and Cheung at least as a result of the dependency of claim 6 from claim 1, which, as demonstrated above, is patentable over the combined teachings of the Park, Fluke and Eggers. The deficiencies of the combined teachings of these references with regard to claim 1 are enumerated above and Cheung does not cure these deficiencies.

Claim 9 was rejected under 35 U.S.C. 103(a) of the above code section as being unpatentable over Park in view of Eggers as applied to claim 8 and further in view of Nayak (U.S. Patent No. 4,789,628).

Without acquiescing in the above rejection, claim 9 is patentable over the combined teachings of Park, Eggers and Nayak at least because of the dependency of claim 9 from claim 8, which, as demonstrated above, is patentable over the combined teachings of Park and Eggers with or without Fluke. The deficiencies of the combination of the teachings of the above references with regard to claim 8 are enumerated above and Nayak does not cure these deficiencies.

Claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Eggers as applied to claim 8 and further in view of Mallet, *et al.* (U.S. Patent No. 6,660,533) (Mallet).

Without acquiescing in the above rejection, claim 12 is patentable over the combined teachings of Park, Eggers and Mallet at least as a result of the dependency of claim 12 from claim 8, which, as demonstrated above, is patentable over the combined teachings of Park and Eggers with or without Fluke. The deficiencies of the combined teachings of the above references with regard to claim 8 are enumerated above and Mallet does not cure these deficiencies. None of the references, either

individually or in combination, teaches or suggests a pad of resistive material on a substrate between a first electrode and a second electrode.

Claim 15 was rejected under paragraph (a) of the above code section as being unpatentable over Park in view of Eggers as applied to claim 8 and further in view of Sandstrom (U.S. Patent No. 6,545,758).

Without acquiescing in the above rejection, claim 15 is patentable over the combined teachings of Park, Eggers and Sandstrom at least because of the dependency of claim 15 from claim 8, which, as demonstrated above, is patentable over the combined teachings of Park and Eggers with or without Fluke. The deficiencies of the combined teachings with regard to claim 8 are enumerated above and Mallet does not cure these deficiencies.

Conclusion

Claims 1-15 satisfy the requirements of 35 U.S.C. §103. Allowance of the above-identified patent application, it is submitted, is in order.

Respectfully submitted,



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